

**Docket 86688CPK  
Customer No. 01333**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of

Thomas M. Laney, et al

INKJET RECORDING ELEMENT  
AND METHOD OF USE

Serial No. 10/722,886

Filed 26 November 2003

Mail Stop APPEAL BRIEF-PATENTS  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA. 22313-1450

Group Art Unit: 1774

Examiner: Pamela R. Schwartz

Sir:

**APPEAL BRIEF PURSUANT TO 37 C.F.R. 41.37 and 35 U.S.C. 134**

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### **APPELLANT'S BRIEF ON APPEAL**

Appellants hereby appeal to the Board of Patent Appeals and Interferences from the Examiner's Final Rejection of claims 1, 3-15, 21, and 39-42 which was contained in the Office Action mailed Jul 12, 2007.

A timely Notice of Appeal was filed on September 11, 2007.

### **Real Party In Interest**

As indicated above in the caption of the Brief, the Eastman Kodak Company is the real party in interest.

### **Related Appeals And Interferences**

Commonly assigned co-currently filed U.S.S.N. 10/722,887 (docket 87439) to Laney et al., which was appealed on August 3, 2006 may have bearing on the Board's decision in the pending appeal. No other appeals or interferences are known which will directly affect or be directly affected by or have bearing on the Board's decision in the pending appeal

### **Status Of The Claims**

Claims 1 to 42 have been pending in the application. Claims 16-20 and 36-38 have been withdrawn from consideration. Claims 2 and 22-35 have been canceled. Claims Claims 1, 3-15, 21, and 39- 42 have been finally rejected. The rejection of these claims, Claims 1, 3-15, 21, and 39-42 are appealed. No claims have been allowed or objected to.

Appendix I provides a clean, double spaced copy of the claims on appeal.

### **Status Of Amendments**

All amendments have been entered.

### **Summary of Claimed Subject Matter**

The invention, in claim 1, is directed to an inkjet recording element comprising a permeable microvoided layer comprising a polylactic-acid-based material, in a continuous phase, and interconnecting voids enabling capillary action, for an ink adsorption rate resulting in a dry time of less than 10 seconds,

the microvoids occupying from 40 to 65 percent by volume of the microvoided layer.

This claimed invention has been described on page 3, lines 16 to 30. The recitation of the interconnecting voids enabling capillary action for an ink adsorption rate resulting in a dry time of less than 10 seconds and the microvoids occupying from 40 to 65 percent by volume of the microvoided layer are described on page 10, lines 18-25, and page 13, lines 10-13.

In a second independent claim, claim 40, the invention further requires that the microvoided layer of the inkjet recording element comprises void initiator in an amount of 30 to 50 percent by volume of the feedstock for the microvoided layer, wherein the microvoided layer is the product of stretching in the longitudinal, and transverse directions at a draw ratio in the range of 2 to 5 times such that the area ratio between the non-stretched and the biaxially stretched film is in the range of 9 to 20 times.

The additional limitations of this second independent claim, claim 40, is described on page 11, lines 22-24, and page 12, lines 16-27.

### **Grounds of Rejection to be Reviewed on Appeal**

The following issues are presented for review by the Board of Patent Appeals and Interferences:

1. Whether claims 1, 3-15, and 39-42 are anticipated by Morita et al. under 35 U.S.C. 102(b)?
2. Whether claims 1, 3-15, 21, and 39-42 are unpatentable over Morita et al. under 35 U.S.C. 103(a)?

### **Arguments**

#### **The Rejection of Claims 1, 3-15, and 39-42 as anticipated by Morita et al. under 35 U.S.C. 102(b)**

##### **Claims 1 and 4 to 15:**

The present invention is directed to "an inkjet recording element." Morita et al. is directed to a porous film useful for leak proof films for

sanitary materials such as a diaper. Applicants' position is that an inkjet recording element clearly is not the same thing as a diaper or other such leak proof sanitary material, contrary to the Examiner's unsupported assumptions and arguments. Applicants consider this distinction to be a key aspect of the present invention.

Responsive to the Examiner's arguments, Applicants take the position that running a diaper or the like through an inkjet printer would represent malfunction rather than anticipation under 35 U.S.C. 102(b). The Examiner has failed to identify any disclosed composition or structure in Morita et al. that would function effectively as an inkjet recording element. Nor would a diaper or the like function inherently as an inkjet recording element, because inkjet recording elements have properties that must be designed to cooperate with a conventional inkjet printer. Words in the present claims such as "inkjet recording element," "ink absorption rate," and "ink-receiving layer" should be given their common sense meaning, in reality. Such claimed features should not be completely ignored, particularly under 35 U.S.C. 102(b).

The Examiner has stated, "many of the instantly claimed properties inherently result from practice of the prior art within its disclosed ranges." [emphasis added] However, the relevant issue to anticipation is whether all of the instantly claimed properties inherently result from practice of the prior art. Moreover, Applicants can say with certainty, by a cursory perusal of the Examples in Morita et al., that it is obvious that all of the examples in Morita inherently do not result in an inkjet recording element or Applicants' claimed invention, nor the claimed properties of the claimed invention.

It should be noted that Applicants are not claiming a combination of selections from various lengthy lists or broad ranges in the prior art, but are actually claiming a product, namely "an inkjet recording element" composed of a particular material, characterized by interconnecting voids enabling capillary action and having a certain adsorption rate and microvoid volume percent.

The Applicants have repeatedly requested the Examiner to identify the particular product or example in Morita et al. that allegedly anticipates

Applicants' invention and explain the reasons for selecting that particular product or example, so that Applicants could specify differences.

However, the Examiner has refused that request, continuing to base anticipation on "the entire reference disclosure." The Examiner concedes that, "The examiner is not relying on a particular example and need not identify one."

In particular, the Examiner asserts that, "The Examiner is relying on what the entire reference disclosure would teach to one of ordinary skill in the art of forming films." However, since the reference has nothing whatsoever to do with inkjet recording elements, but rather leak proof films of sanitary materials such as a paper diaper or packaging materials, it is difficult to see how it follows that Morita et al. anticipates the claimed invention under 35 U.S.C. 102(b). No evidence or explanation of the alleged anticipation is provided in this rejection.

In the final rejection, the Examiner states, "It would have been obvious to one of ordinary skill in the art to modify the composition to prevent the unfavorable breakage suggested by the reference." [emphasis added]. It is respectfully submitted that such analysis represents and improper conflation of the issue of anticipation with the issue of obviousness.

Claims 4 to 15 are directed to secondary features of the present invention and are patentable for the reason that they depend from claim 1. Thus, these dependent claims will stand or fall with independent Claim 1.

### Claim 3

Claim 3 further requires that the microvoided layer of the recording element of claim 1 have a total calculated absorbent capacity of at least about 14 cc/m<sup>2</sup>. The skilled artisan would appreciate that this would require an interconnected pore structure, which would render the material non-leak proof. The examples in Morita et al. do not meet this limitation, and there are no teachings in Morita et al. that this characteristic would be anything but undesirable and/or unobtainable. The feature of claim 3 is, therefore, novel over Morita et al.

Claims 39-40

Claims 39 and 40 further differentiate from Morita et al. These claims recite that the void initiator is present in an amount of 30 to 50 percent by volume of the feedstock for the microvoided layer, and the microvoided layer is the product of stretching in the longitudinal and transverse directions at a draw ratio in the range of 2 to 5 times such that the area ratio between the non-stretched and the biaxially stretched film is in the range of 9 to 20 times.

The Examiner has failed to point to where in the Morita et al. patent there is a teaching of a particular material, with respect to claim 39, that the void initiator is present in an amount of 30 to 50 percent by volume of the feed stock for the microvoided layer and the microvoided layer is the product of stretching in the longitudinal and transverse directions at a draw ratio in the range of 2 to 5 times such that the area ratio between the non-stretched and the biaxially stretched film is in the range of 9 to 20 times? No evidence or explanation of the alleged anticipation is provided.

In contrast, the only Example of biaxial stretching in Morita et al. (Example 3 in Table 3) employs an amount of inorganic filler of about 33% (50 divided by 150), which in terms of volume is less than 20 percent (the density of the initiator is several times that of the polymer). In contrast, Applicants have used such inorganic filler in the examples in an amount above 60 weight percent, approximately twice the inorganic loadings of Morita's Example 3, the sole example of biaxial stretching in Morita et al. (The organic void initiators, having a lower density, can be used at lower weight percents.)

Claims 41 and 42

Claims 41 and 42 further recite that the microvoided layer is the product of stretching in the longitudinal and transverse directions at a draw ratio of greater than 3 or at least about 3.3 such that the area ratio between the non-stretched and the biaxially stretched film is greater than 10 or at least about 11 times. In contrast, Morita et al. specify a range of stretching

of 1.1 to 10 times, consistent with the examples in Morita et al., page 5, lines 27-30.

**The Rejection of Claims 1, 3-15, 21, and 39-42 as unpatentable over Morita et al. under 35 U.S.C. 103(a)**

**Claim 1 and 4 to 15:**

It is the conclusion of the Examiner that "...Since the reference discloses ranges and materials, it would have been obvious to one of ordinary skill in the art to form a film within these ranges with desired size and quantity of microvoids. That the properties will vary within the disclosed ranges would have been expected by one of ordinary skill in the art....These modifications would have been obvious to one of ordinary skill in the art to achieve either of the results set forth above." (Page 2 of the final rejection.)

Applicants' position is that the Examiner's rejection is clearly based on hindsight, providing no evidentiary or factual support other than Applicants' own teachings. Morita et al. cannot possibly teach an inkjet recording element comprising a permeable microvoided layer of polylactic-acid-based material characterized by interconnecting voids enabling capillary action, for an ink adsorption rate resulting in a dry time of less than 10 seconds, the microvoids occupying from 40 to 65 percent by volume of the microvoided layer. This is for the simple reasons that Morita et al. is directed to obtaining materials such as sanitary diapers and do not intend to obtain an inkjet recording element. Accordingly, there is no teaching that an inkjet recording element could be obtained or how to obtain it. That would involve extensive research and development, not mere hindsight allegations. It is not predictable that the claimed porous material could be obtained or how such a material could be obtained using various compositions or techniques.

The Examiner has not satisfied the burden under 35 U.S.C. 103 that the invention would have been obvious in view of the prior art alone.



The fact that “the reference discloses ranges and materials,” does not mean that “it would have been obvious to one of ordinary skill in the art to form a film within these ranges with desired size and quantity of microvoids,” since the desired properties are only taught by the present disclosure. Accordingly, one wonders how the skilled artisan reading Morita et al. could have “desired” the size and quantity of microvoids obtained in the present invention,” as alleged in the final rejection, without reading Applicants’ disclosure.

With similar logic, the Examiner argues that the necessary “modifications” to obtain Applicants’ invention “would have been obvious to one of ordinary skill in the art to achieve either of the results set forth above.” However, that argument begs the question of whether Morita et al. would have sought to achieve the results obtained by the present invention or whether Morita et al. would have known how to obtain the results of the present invention. Although Applicants agree that blindly varying each step of the process of Morita et al. would vary the resulting properties, merely changing properties or process steps in the prior art is not an adequate description or teaching of the present invention. The element of time and predictability is relevant on this issue. Based on the present inventors’ testimony, the present invention involved substantial time and surprise.

The Examiner states that the term “inkjet recording element” or the like lends little if any structure to the medium. Applicants submit, as a matter of common sense, that it lends sufficient structure to make clear that Morita et al. are not making an inkjet recording element or remotely teaching one. The claimed properties of the inkjet recording element confirm that distinguishing structure.

Furthermore, the Examiner has concluded that Applicants’ disclosed method of forming a permeable microvoided layer cannot be distinguished from and the method of forming a film disclosed in Morita et al. The Examiner has stated that “the claim limitations that have been added to claim 1, while not specifically disclosed by the reference, are

considered to be inherent therein when the range of stretching is as set forth by the reference at page 5, lines 27-30.” [emphasis added.]

The Examiner has failed to give due respect to the Declaration under 37 C.F.R. 1.132 (See Appendix), which categorically states that the examples of Morita et al. do not meet the claim limitations of the present invention. Thus, the Declaration establishes that the claim limitations are, in fact, not inherent within the cited reference.

The Examiner has stated that Applicants have the “burden” to “demonstrate that the medium of the prior art will not meet this claim limitation.” Applicants, however, find it unnecessary to go to the very considerable time and expense of running extrusion testing of various materials to prove something they already know, especially since the Applicants filed the Application three years ago and is otherwise occupied with other Research & Development activities at the present time.

Furthermore, the Examiner’s rejection is based on clear error in the law. It is elementary in patent law that inherency applies to anticipation, not to obviousness. Therefore, there is no need for Applicants to establish that the claimed invention is not inherent in various broad ranges in the prior art selected with hindsight based on Applicants’ own disclosure. In point of fact, Morita et al. disclose 14 actual examples and not one of them is remotely near Applicants’ invention and would not produce a material having the required properties for an inkjet recording element.

The courts have repeatedly criticized the use of “inherency” as a basis of obviousness. For example, see In re Sporman, 363 F.2d 444, 150 USPQ 449 (CCPA 1965); In re Naylor, F.2d 765, 152 USPQ 106 (CCPA 1996); and In re Adams, 356 F.2d 998, 148 USPQ 742 (CCPA 1966).

In the latter case, the court stated:

The Patent Office represents a number of hindsight arguments....patentability does not hinge on inherency...the solicitor adds the argument that the *superiority* of appellant's heat transfer is *inherent* in the use of the foam. Again, we observe that, of course, it is...[But] there is not the slightest suggestion that anyone *knew* of the existence of this inherent superiority until Adams disclosed it. After all, Bell's telephone was "inherently" capable of transmitting speech, DeForest's triode was "inherently" capable of amplification...."

See also In re Shetty, 566 F.2d 81, 195 USPQ 753 (CCPA 1977):

"Inherency is quite immaterial if, as the record established here, one of ordinary skill in the art would not appreciate or recognize the inherent result."

One may speculate as to why Morita et al. failed to obtain the open-celled film of the present application: Perhaps because they were not able to (formulation difficulties, tearing, and other problems have been referred to). Perhaps because they did not want a material as presently claimed, since they desired a leak proof material. Perhaps because they did not know it was possible to simultaneously obtain such high biaxially stretching and high loadings (this is suggested by Comparative Example 2 in which simultaneously high loading and stretching resulted in "extrusion impossible"). Biaxially stretching at high loadings is nowhere taught by Morita et al., nor is any predictable or actual connection between leak proof diaper material and inkjet recording materials.

Applicants submit that the materials made by Morita et al. would not be useful in an inkjet recording element because it would not allow the necessary passage of the liquid ink through the material. On the other hand, changing the composition of Morita et al. to meet the limitations of the present invention is likely to be inconsistent with Morita's purpose of obtaining a leak proof material. See, for example, page 2, lines 51 to 54, of Morita et al which states that "the film is useful as a material for leak proof films of sanitary materials such as a paper diaper and packaging materials." The Examiner is clearly wrong in alleging that

Morita et al. state, intend, or imply anything with respect to an inkjet recording element.

Claims 4 to 15 are directed to secondary features of the present invention and are patentable for the reason that they depend from claim 1. Thus, these dependent claims will stand or fall with independent Claim 1.

### Claim 3

Claim 3 further requires that the microvoided layer of the recording element of claim 1 has a total calculated absorbent capacity of at least about 14 cc/m<sup>2</sup>. The skilled artisan would appreciate that this would require an interconnected pore structure that would render the material non-leak proof. The examples in Morita et al. do not meet this limitation, and there are no teachings in Morita et al. that this characteristic would be anything but undesirable and/or unobtainable. The feature of claim 3 is, therefore, novel over Morita et al.

### Claims 39-40

Claims 39 and 40 further differentiate from Morita et al. These claims recite that the void initiator is present in an amount of 30 to 50 percent by volume of the feedstock for the microvoided layer, and the microvoided layer is the product of stretching in the longitudinal and transverse directions at a draw ratio in the range of 2 to 5 times such that the area ratio between the non-stretched and the biaxially stretched film is in the range of 9 to 20 times.

In contrast, the only Example of biaxial stretching in Morita et al. (Example 3 in Table 3) employs an amount of inorganic filler of about 33% (50 divided by 150), which in terms of volume is less than 20 percent (the density of the initiator is several times that of the polymer). In contrast, Applicants have used such inorganic filler in the examples in an amount above 60 weight percent, approximately twice the inorganic loadings of Morita's Example 3, the sole example of biaxial stretching in Morita et al. (The organic void initiators, having a lower density, can be used at lower weight percents.)

The Examiner states in the Advisory Action that Morita et al. teaches "that if the amount of filler is too low there will be a low percentage of open cells. One

of ordinary skill in the art would have expected that higher ratios of filler to resin and a higher degree of stretching would result in a greater void volume and porosity.” However, this assumes that there are no limits and no unobvious improvements based on the teachings in Morita et al. In reality, the skilled artisan can not know the limits unless they are looking for the limits with respect to void volume and porosity and testing the limits, which activities are absent in Morita et al. Furthermore, the evidence is that breakage and other manufacturing limits are very common in extrusion processing, which unpredictability *at the time of the invention* should not be negated by Applicants’ disclosure.

#### Claims 41 and 42

Claims 41 and 42 further recite that the microvoided layer is the product of stretching in the longitudinal and transverse directions at a draw ratio of greater than 3 or at least about 3.3 such that the area ratio between the non-stretched and the biaxially stretched film is greater than 10 or at least about 11 times. In contrast, Morita et al. specify a range of stretching of 1.1 to 10 times, consistent with the examples in Morita et al., page 5, lines 27-30.

It appears to be of considerable probative weight that Morita et al., even when claiming very broadly a range of stretching explicitly set a limit on what Morita et al. thought was feasible or workable. Yet, the Examiner ignores such limits based only on Applicants’ own disclosure.

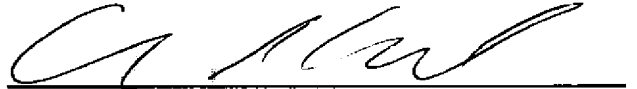
#### Summary

In view thereof, it follows that the subject matter of the claims would not have been anticipated by, or obvious in view of, Morita et al. at the time the invention was made. The rejections are in clear error, both under the law and according to the facts of the case, and should be withdrawn.

**Conclusion**

For the above reasons, Appellants respectfully request that the Board of Patent Appeals and Interferences reverse the rejection by the Examiner and mandate the allowance of Claims .

Respectfully submitted,



Attorney for Appellants  
Registration No. 30,721

Chris P. Konkol/clb  
Telephone: 585 722-0452  
Facsimile: 585 477-1148  
Enclosures

If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.

## **Appendix I - Claims on Appeal**

1. (Previously presented) An inkjet recording element comprising a permeable microvoided layer comprising a polylactic-acid-based material, in a continuous phase, and interconnecting voids enabling capillary action, for an ink adsorption rate resulting in a dry time of less than 10 seconds, the microvoids occupying from 40 to 65 percent by volume of the microvoided layer.

2. (Canceled)

3. (Original) The recording element of claim 1 wherein the microvoided layer has a total calculated absorbent capacity of at least about 14 cc/m<sup>2</sup>.

4. (Original) The recording element of claim 1 wherein the voids contain void initiating particles.

5. (Original) The recording element of claim 4 wherein the particles having a particle size of from about 5 nm to about 15  $\mu$ m.

6. (Original) The recording element of claim 1 wherein the microvoided layer is a biaxially oriented polylactic-acid-containing material.

7. (Original) The recording element of claim 1 wherein the microvoided layer has a dry thickness of from about 25 to about 400  $\mu\text{m}$ .

8. (Original) The recording element of claim 1 wherein the polylactic-acid-based material is composed of at least 75% by weight of poly(L-lactic acid).

9. (Original) The recording element of claim 4 wherein the particles are inorganic and have an average particle size of from about 0.1 to about 10  $\mu\text{m}$  and make up from about 45 to about 75 weight % of the total weight of the microvoided layer.

10. (Original) The recording element of claim 4 wherein the particles are organic and have an average particle size of from about 0.3 to about 2  $\mu\text{m}$  and comprise from about 45 to about 75 weight % of the total weight of the microvoided layer.

11. (Original) The recording element of claim 1 wherein the polylactic-acid-based material comprises a mixture of at least 90% poly(L-lactic acid) and at least 1% poly(D-lactic acid).

12. (Original) The recording element of claim 9 wherein the inorganic particles are present in an amount between 50 to 65 weight %.



13. (Original) The recording element of claim 9 wherein the inorganic particles are selected from the group consisting of barium sulfate, calcium carbonate, zinc sulfide, zinc oxide, titanium dioxide, silica, alumina, and combinations thereof.

14. (Original) The recording element of claim 9 wherein said inorganic particles have an average size from 0.3 to 2.0  $\mu\text{m}$ .

15. (Original) The recording element of claim 1 wherein the microvoided layer is an uppermost ink-receiving layer.

16. (Withdrawn) The recording element of claim 1 wherein the microvoided layer is a support or component thereof.

17. (Withdrawn) The recording element of claim 1 wherein the microvoided layer is between a support and an ink-receiving layer.

18. (Withdrawn) The recording element of claim 17 wherein the microvoided layer is in a multilayer support and is adjacent to a second support layer.

19. (Withdrawn) The recording element of claim 18 wherein the second support layer comprises a voided or non-voided polylactic-acid-based material which the second support layer is adjacent to and integral with the microvoided layer.

20. (Withdrawn) The recording element of claim 18 wherein the second support layer comprises paper or resin-coated paper.

21. (Original) The recording element of claim 1 wherein said continuous phase comprises additional polymers or blends of other polyesters.

Claims 22-35 (Canceled)

36. (Withdrawn) An inkjet printing process, comprising the steps of:

A) providing an inkjet printer that is responsive to digital data signals;

B) loading the printer with an inkjet recording element as described in claim 1;

C) loading the printer with an inkjet ink composition; and

D) printing on the inkjet recording element using the inkjet ink in response to the digital data signals.

37. (Withdrawn) The inkjet printing process of claim 36 wherein the permeable microvoided layer was extruded as a monolayer film.

38. (Withdrawn) The inkjet printing process of claim 36 wherein the permeable microvoided layer was stretched at a temperature of under 75°C.

39. (Previously presented) The inkjet recording element of claim 1 wherein the void initiator is present in an amount of 30 to 50 percent by volume of the feed stock for the microvoided layer, and wherein the microvoided layer is the product of stretching in the longitudinal and transverse directions at a draw ratio in the range of 2 to 5 times such that the area ratio between the non-stretched and the biaxially stretched film is in the range of 9 to 20 times.

40. (Previously presented) An inkjet recording element comprising a permeable microvoided layer comprising a polylactic-acid-based material, in a continuous phase, and interconnecting voids enabling capillary action, for an ink adsorption rate resulting in a dry time of less than 10 seconds, the microvoids occupying from 40 to 65 percent by volume of the microvoided layer, wherein the void initiator is present in an amount of 30 to 50 percent by volume of the feedstock for the microvoided layer, and wherein the microvoided layer is the product of stretching in the longitudinal, and transverse directions at a draw ratio in the range of 2 to 5 times such that the area ratio between the non-stretched and the biaxially stretched film is in the range of 9 to 20 times.

## **Appendix II - Evidence**

Declaration under 37 CFR 1.132 submitted in Applicants' Supplemental Amendment of May 9, 2006.

### **Appendix III – Related Proceedings**

No decisions.

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